Massachusetts HIV/AIDS Data Fact Sheet

Who is dying with HIV/AIDS and how has this changed over time?

June 2006

Introduction:

The death data in this fact sheet describe *all* deaths among people reported with HIV/AIDS in Massachusetts including deaths from *non-HIV related* causes, such as motor vehicle crashes, drug overdoses and suicides. Therefore, the number of deaths reported here will differ from the number of *HIV-related* deaths reported in *Massachusetts Deaths* by the Massachusetts Department of Public Health, Center for Health Information, Statistics, Research and Evaluation.

Over time there has been an increase, decline and then a leveling-off in the number of deaths among people reported with AIDS in Massachusetts. In the six-year period from 1999 to 2004, the number of deaths annually among people reported with HIV infection and AIDS fluctuated between 320 and 424 deaths. This stability in numbers of deaths among people reported with HIV/AIDS may indicate that improvements in care and treatment are no longer able to effect the same reduction in HIV/AIDS-related mortality as they once did.

Trends in mortality among people reported with HIV/AIDS reflect shifts in HIV infection and AIDS diagnoses as well as highlight differential survival across groups. For example, in the past six years, females have accounted for an increasing proportion of both AIDS diagnoses and deaths among people reported with HIV/AIDS. HIV infection diagnosis patterns across race/ethnicity are mirrored in elevated mortality rates of black (non-Hispanic) and Hispanic individuals compared to white (non-Hispanic) individuals. Regarding exposure mode, over half of all deaths from 1999 to 2004 were among people with a primary reported risk of injection drug use, possibly highlighting a differential survival experienced by this group.

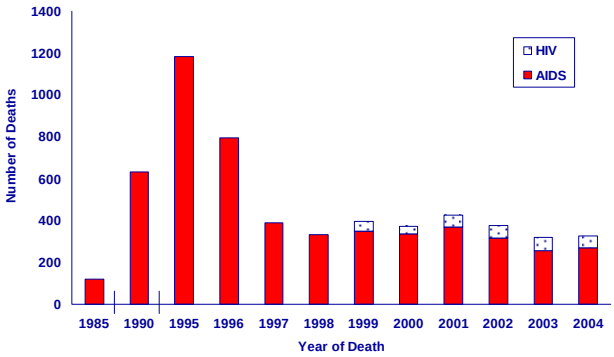
The following analyses describe trends in deaths among people reported with HIV/AIDS in Massachusetts in greater detail.

Rank of HIV/AIDS among leading causes of death in 2003[1]:

- In 2003, HIV/AIDS was the 22nd leading cause of death in Massachusetts.
- HIV/AIDS was the 6th leading cause of death for Hispanic individuals, the 9th leading cause of death for black (non-Hispanic) individuals and the 25th leading cause of death for white (non-Hispanic) individuals.
- Among 25-44 year olds, HIV/AIDS was the 7th leading cause of death in 2003; eight years prior, it was the leading cause of death in this age group.

General statistics:

Figure 1. Number of Deaths Among People Reported with HIV Infection and AIDS by Year of Death: Massachusetts, 1985-2004



Note: Death data for people with HIV who had not yet progressed to AIDS are not available before 1999 and therefore not included here. Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/2005

- After reaching a peak of 1,212 in 1994, deaths among people reported with AIDS declined each year through 1998, when there were 332 deaths. (Death data for people reported with HIV infection (non-AIDS) are not available prior to 1999 because HIV infection was not a reportable condition before that time.)
- From 1999 to 2004, the annual total number of deaths of people reported with HIV (non-AIDS) and AIDS ranged from 320 to 424 deaths.

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- The proportion of deaths among people with HIV (non-AIDS) of total deaths among people reported with HIV/AIDS increased from 12% in 1999 to 20% in 2003 and then declined to 18% in 2004. Note: people with HIV infection (non-AIDS) refers to those who were reported with an HIV infection diagnosis and did not progress to AIDS before death.

Deaths among people reported with HIV infection compared to deaths among people reported with AIDS:

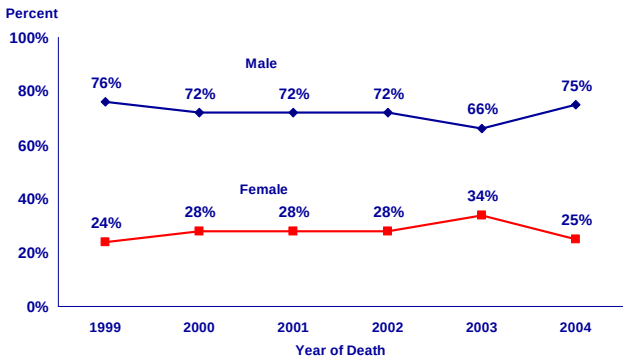
- Among people dying with HIV infection (non-AIDS), there is a higher proportion of injection drug use as a risk of HIV exposure: 60% of people reported with HIV infection who died from 1999 to 2004 were reported with injection drug use as their risk, compared to 52% of people who died with AIDS.

Trends in progression to AIDS after HIV infection diagnosis:

- Of 1,316 people diagnosed with HIV infection in 1999, 27% were concurrently diagnosed with AIDS (diagnosed within 2 months). By 1 year after HIV infection diagnosis, 39% had been diagnosed with AIDS, by 2 years 44%, by 3 years 46%, by 4 years 48%, by 5 years 49%, and by 6 years 50% had been diagnosed with AIDS. Fifty percent have not progressed to AIDS.
- The time for progression to AIDS among people diagnosed with HIV infection from 2000 to 2003 follows a very similar distribution as those diagnosed in 1999 (see table 14 of the appendix.) This may suggest that treatment and care advances over the 5-year period have not reduced AIDS-related morbidity. Alternatively, this trend could be due to reporting patterns affecting the reported dates of HIV infection and AIDS diagnosis. At this point it is still too soon to perform a deeper analysis of progression to AIDS due to the limited length of time since initiation of HIV reporting (which was implemented in 1999). Future survival and progression analyses will help to identify sub-populations who may be experiencing differential morbidity and mortality.

Deaths among people reported with HIV/AIDS by gender:

Figure 2. Percent of Deaths among People Reported with HIV/AIDS by Gender and Year of Death: Massachusetts, 1999-2004



Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/05

- The proportion of deaths among people reported with HIV/AIDS who were female increased from 24% in 1999 to 34% in 2003 and then decreased to 25% in 2004.

Deaths among people reported with HIV/AIDS by place of birth:

- From 1999 to 2004, deaths among people reported with HIV/AIDS by place of their birth remained stable, with 75% to 80% of the deaths among people born in the U.S., 12% to 19% among people born in Puerto Rico or another U.S. dependency, and 5% to 10% among people born outside the U.S.

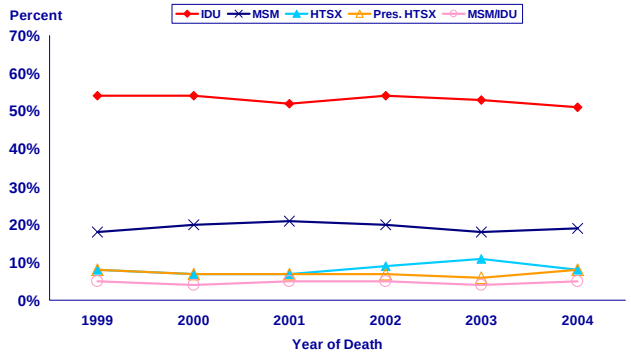
Deaths among people reported with HIV/AIDS by race/ethnicity:

- From 1999 to 2004, the proportion of deaths of people reported with HIV/AIDS who were white (non-Hispanic) ranged from 46% to 54%, black (non-Hispanic) from 22% to 30% and Hispanic from 18% to 27%.
- The number of deaths of people reported with HIV/AIDS who were Hispanic decreased by 26% from 1999 to 2004 (from 107 to 79), black (non-Hispanic) by 25% (from 97 to 73) and white (non-Hispanic) by 12% (from 188 to 166).

Deaths among people reported with HIV/AIDS by exposure mode:

- From 1999 to 2004, the distribution of deaths among people reported with HIV/AIDS by exposure mode remained fairly stable, with over 50% of deaths each year in people with a primary reported risk of injection drug use and 18% to 21% in people with a risk of male-to-male sex.

Figure 3. Percent of Deaths among People Reported with HIV/AIDS by Mode of Exposure and Year of Death: Massachusetts, 1999-2004



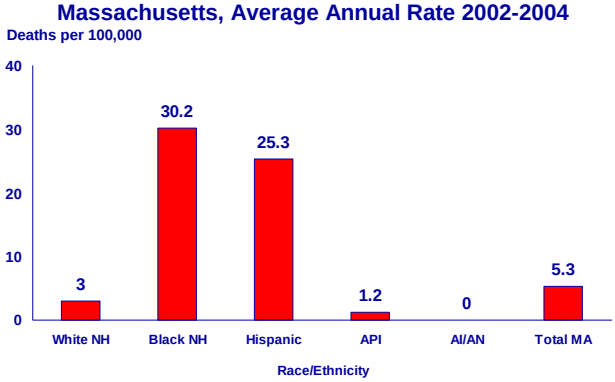
Note: Other and Undetermined modes of exposure are not included in this figure. IDU= Injection Drug Use, MSM=Male-to-Male Sex, HTSX=Heterosexual Sex, Pres.=Presumed; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/05

- From 1999 to 2004, the proportion of deaths among people reported with HIV/AIDS with a reported risk of heterosexual sex ranged from 7% to 11%, of presumed exposure through heterosexual sex from 6% to 8%, of male-to-male sex and injection drug use from 4% to 5%, and of all other risks 2% to 4%.
- From 1999 to 2004, the number of deaths among males reported with HIV/AIDS with a risk of injection drug use decreased by 27% (from 159 to 116), while the number of females decreased by 4% (from 54 to 52).

Average annual rate of death among people reported with HIV/AIDS by race/ethnicity, 2002-2004:

- As of July 1, 2005, for every 100,000 people in Massachusetts, an average of 5.3 people died with a reported diagnosis of HIV/AIDS each year within the years 2002 to 2004 (rate adjusted for age).

Figure 4. Age-Adjusted Rate of Death per 100,000 Population Among People Reported with HIV/AIDS by Race/Ethnicity: Massachusetts, Average Annual Rate 2002-2004



1 Population sizes for rate calculations are based on year 2000 population estimates from the MDPH Center for Health Information, Statistics, Research and Evaluation, all rates are age-adjusted using the 2000 US standard population; NH= Non-Hispanic, API = Asian/Pacific Islander; AI/AN = American Indian/Alaska Native; Data Source: MDPH HIV/AIDS Surveillance Program, Data as of 7/1/05

- The age-adjusted average annual rate of death for 2002 to 2004 for black (non-Hispanic) individuals reported with HIV/AIDS (30.2 per 100,000) is 10 times greater, and for Hispanic individuals (25.3 per 100,000) is 8 times greater than for white (non-Hispanic) individuals (3.0 per 100,000). These rates reflect HIV diagnosis by race/ethnicity: black (non-Hispanic) individuals are diagnosed with HIV infection at 13 times and Hispanic individuals at 9 times the rate of white (non-Hispanic) individuals.

Case fatality rates by exposure mode and race/ethnicity:

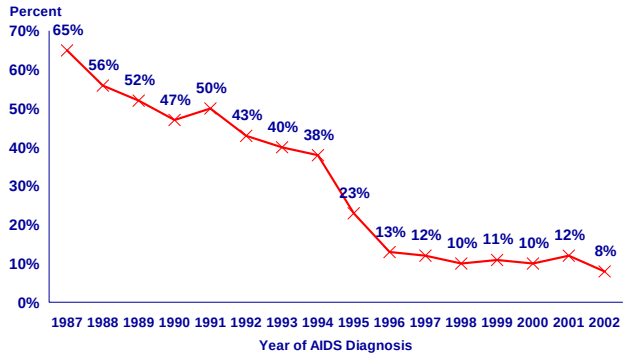
- The HIV/AIDS case fatality rate represents the proportion of people reported with HIV/AIDS who died in a specific time period. (See Appendix for a full explanation of case fatality rate calculations).
- From 2002 to 2004, for every 100 people diagnosed and living with HIV/AIDS there was an annual average of 2.2 deaths, or a case fatality rate of 2.2%.
- By exposure mode, the highest average case fatality rate (2002 to 2004) was for people with a primary reported risk of injection drug use at 4.0%, followed by male-to-male sex and injection drug use at 3.1%, other exposure modes (including perinatal and blood/blood products) at 1.9%, heterosexual sex with partners of known risk and HIV status at 1.5%, male-to-male sex at 1.3%, and heterosexual

sex with partners of unknown risk and HIV status (presumed heterosexual) at 1.0%.

- By place of birth, the lowest average case fatality rate (2002 to 2004) was for people born outside the US at 1.1%. The average case fatality rate from 2002 to 2004 was 2.5% for both people born in the US or in Puerto Rico/Other US Dependencies.
- The average case fatality rate from 2002 to 2004 did not vary substantially by race/ethnicity: the case fatality rate was 2.3% among white (non-Hispanic) individuals, 2.1% among black (non-Hispanic) individuals and 2.0% among Hispanic individuals.
- The average case fatality rate from 2002 to 2004 was 2.2% for both males and females.
- The average case fatality rate from 2002 to 2004 was 2.1% for white (non-Hispanic) males, 2.3% for black (non-Hispanic) males, and 2.1% for Hispanic males.
- The average case fatality rate from 2002 to 2004 was 3.1% for white (non-Hispanic) females, 1.7% for black (non-Hispanic) females, and 1.9% for Hispanic females.

Trends in survival after an AIDS diagnosis:

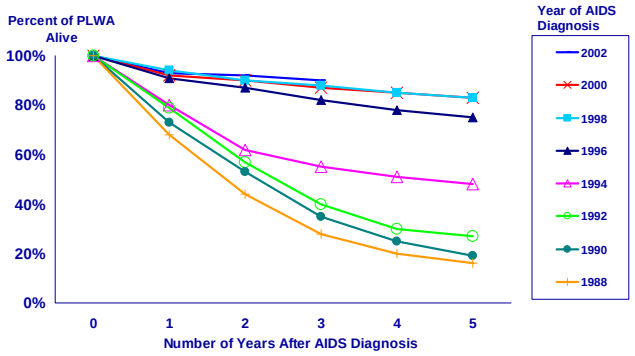
Figure 5. Percent of People Who Died Within 2 Years of an AIDS Diagnosis by Year of AIDS Diagnosis: Massachusetts, 1987-2002



Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/05

- From 1987 to 1998, the proportion of people diagnosed with AIDS who died within two years of their diagnosis declined from 65% to 10%.
- From 1999 to 2001, the proportion of people diagnosed with AIDS who died within two years of their diagnosis was relatively stable at 8% to 12%.

Figure 6. Percent of People Living with AIDS (PLWA) Who Are Alive 1-5 Years After an AIDS Diagnosis by Year of AIDS Diagnosis: Massachusetts, 1988-2002



NOTE: Trend lines are incomplete for more recent years of diagnosis because fewer years of observation are available; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/05

- In comparing survival trends for people diagnosed in 1988 with people diagnosed in more recent years, it is evident that the proportion of people who survive with AIDS is greater for each time period. Among people diagnosed in 1988, 16% survived 5 years after an AIDS diagnosis compared with 27% diagnosed in 1992, 75% diagnosed in 1996, and 83% diagnosed in 2000.
- For people diagnosed in 2000 and 2002 survival leveled off compared with 1998. This may indicate that advances in treatment and care are no longer able to sustain dramatic reductions in mortality as were seen in earlier years.

Data Sources:

[1] Data included here represent HIV/AIDS-related deaths from Massachusetts Deaths 2003, Center for Health Information, Statistics, Research and Evaluation, available online at http://www.mass.gov/dph/bhsre/death/2003/report.pdf

All HIV/AIDS Case Data: Massachusetts Department of Public Health (MDPH) HIV/AIDS Surveillance Program, Data as of July 1, 2005

For more detailed information and a description of data limitations please see "HIV/AIDS in Massachusetts: An Epidemiologic Profile," available online at www.mass.gov/dph/aids